

### REMARKS

This application has been carefully reviewed in light of the Office Action mailed on August 6, 2003. Claims 55, 125 and 126 have been amended. Applicants respectfully request reconsideration of the above-referenced application in light of the amendments and following remarks.

At the outset, Applicants acknowledge with gratitude that claim 124 is in condition for allowance.

Claims 55 and 57 stand rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by Okutoh et al. (U.S. Patent No. 6,180,974) ("Okutoh I"). This rejection is traversed and reconsideration is requested.

Okutoh I fails to anticipate the present invention. Okutoh I does not teach "a capacitor comprising an electrode having a non-oxide layer comprising platinum-rhodium material and a non-oxide layer comprising platinum material formed on top and in contact with the platinum-rhodium layer," as claim 55 recites (emphasis added).

Okutoh I teaches that a platinum film 230 is formed on and in contact with a PtRhO<sub>x</sub> film 229. In Fig. 16, Okutoh I teaches that the lower electrode consists of "a lowermost-layer electrode 228 consisting of the PtRh film, an intermediate-layer lower electrode 229 consisting of the PtRhO<sub>x</sub> film, and an uppermost-layer lower electrode 230 consisting of the Pt film." (Col. 28, lines 42-45). Okutoh I does not teach that a non-oxide layer comprising platinum-rhodium material and a non-oxide layer comprising platinum material is formed on top and in contact with the platinum-rhodium layer.

Claim 57 depends from claim 55 and is at least allowable for the reasons set forth above with regard to claim 55. Accordingly, the rejection of claims 55 and 57 based on Okutoh I should be withdrawn.

Claims 55 and 57 stand rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by Okutoh et al. (U.S. Patent No. 6,201,271) (“Okutoh II”). This rejection is traversed and reconsideration is requested.

Okutoh II fails to anticipate the present invention. Okutoh II does not teach “a capacitor comprising an electrode having a non-oxide layer comprising platinum-rhodium material and a non-oxide layer comprising platinum material formed on top and in contact with the platinum-rhodium layer,” as claim 55 recites (emphasis added).

Okutoh II teaches that a platinum film 22 is formed on and in contact with a PtRhOx film 21. In Figure 8, Okutoh II teaches a lower electrode with an “alloy film 20 of platinum and rhodium . . . an alloy oxide film 21 of platinum and rhodium . . . a platinum film 22 . . . [and] a titanium oxide film 12.” (Col. 8, lines 32-36). Okutoh II does not teach that a non-oxide layer comprising platinum-rhodium material and a non-oxide layer comprising platinum material is formed on top and in contact with the platinum-rhodium layer.

Claim 57 depends from claim 55 and is at least allowable for the reasons set forth above with regard to claim 55. Accordingly, the rejection of claims 55 and 57 based on Okutoh II should be withdrawn.

Claim 55 stands rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by Uhlenbrock. This rejection is traversed and reconsideration is requested.

Uhlenbrock fails to anticipate the present invention. Uhlenbrock does not teach “a capacitor comprising an electrode having a non-oxide layer comprising platinum-rhodium material and a non-oxide layer comprising platinum material formed on top and in contact with the platinum-rhodium layer,” as claim 55 recites. Uhlenbrock does not teach an electrode with two layers as claimed. Uhlenbrock merely discloses that “the Pt-Rh layer will itself be the lower electrode.” (Col. 13, lines 31) (emphasis added). Specifically, Uhlenbrock fails to teach an electrode with a non-oxide layer comprising

platinum-rhodium material and a non-oxide layer comprising platinum material is formed on top and in contact with the platinum-rhodium layer. Accordingly, the rejection of claim 55 based on Uhlenbrock should be withdrawn.

Claim 58 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Okutoh II. This rejection is traversed and reconsideration is requested.

For at least the reasons provided above, Okutoh II does not teach or suggest the limitations found in claim 58. Specifically, claim 58 depends from claim 55 and thus, Okutoh II does not teach or suggest that a non-oxide layer comprising platinum-rhodium material and a non-oxide layer comprising platinum material is formed on top and in contact with the platinum-rhodium layer.

Moreover, Applicants respectfully submit that the Office Action has failed to set forth a *prima facie* case of obviousness. See M.P.E.P. § 2142. In particular, Okutoh II does not teach or suggest Applicants' claimed thickness of the platinum layer. The Office Action asserts that "it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the platinum layer has a thickness within the range of about 50 to about 150 Angstroms." (Office Action, pg. 5). However, Okutoh II does not even teach or suggest a thickness of the platinum layer. "To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art." M.P.E.P. § 2143.03 (emphasis added).

Still further, the Office Action asserts that "Applicant can rebut a *prima facie* case of obviousness based on overlapping ranges by showing unexpected results or the criticality of the claimed range." (Office Action, pg. 5). Applicants respectfully submit that since Okutoh II does not teach or suggest a thickness for the platinum layer, no evidence is required since the Office Action has failed to set forth a *prima facie* case of obviousness. See M.P.E.P. § 2144.05. As a result, Okutoh II does not render Applicants' claimed platinum thickness obvious and the rejection should be withdrawn.

Claim 125 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Okutoh II in view of Shinkawata. This rejection is traversed and reconsideration is requested.

Okutoh II fails to teach or suggest the present invention. Okutoh II does not teach or suggest “a capacitor consisting essentially of an electrode with a titanium nitride layer provided beneath a platinum-rhodium layer and a platinum layer formed on top of the platinum-rhodium layer,” as claim 125 recites (emphasis added).

Okutoh II teaches that a platinum film 22 is formed on and in contact with a PtRhOx film 21. In Figure 8, Okutoh II teaches a lower electrode with an “alloy film 20 of platinum and rhodium . . . an alloy oxide film 21 of platinum and rhodium . . . a platinum film 22 . . . [and] a titanium oxide film 12.” (Col. 8, lines 32-36). Shinkawata is relied upon for teaching a titanium nitride layer provided beneath a platinum-rhodium layer and a platinum layer.

The two references teach away from each other. Shinkawata teaches a titanium nitride layer 15 for suppressing diffusion beneath the platinum-rhodium layer 16. However, Okutoh II already provides a layer that suppresses diffusion. Specifically, Okutoh II teaches “an alloy oxide film 21 of platinum and rhodium [are] formed as a diffusion barrier and oxygen preventing film.” (Col. 8, lines 33-35). The alloy oxide film 21 is provided on top of the platinum-rhodium layer 20 and beneath the platinum layer. Thus, there is no motivation to combine the references since Okutoh II teaches a diffusion barrier layer formed beneath the platinum layer and not beneath the platinum-rhodium layer.

Moreover, even if the references were properly combinable, they still would fail to teach or suggest, “a capacitor consisting essentially of an electrode with a titanium nitride layer provided beneath a platinum-rhodium layer and a platinum layer formed on

top of the platinum-rhodium layer,” as claim 125 recites (emphasis added). Applicants claim an electrode with essentially three layers. The combination of references would yield an electrode with four layers. Okutoh II teaches an electrode with three layers and adding the titanium nitride layer would yield four. Accordingly, the rejection of claim 125 should be withdrawn.

Claim 126 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Okutoh II. This rejection is traversed and reconsideration is requested.

Okutoh II fails to teach or suggest the present invention. Okutoh II does not teach or suggest “a capacitor comprising an electrode having a layer consisting essentially of platinum-rhodium material and at least one layer comprising platinum material formed on top of the platinum-rhodium layer, said platinum-rhodium layer comprises approximately more than 20 percent rhodium,” as recited in claim 126.

As described above, Okutoh II teaches that a platinum film 22 is formed on and in contact with a PtRhOx film 21. Thus, Okutoh II does not teach or suggest a layer consisting essentially of platinum-rhodium material and a layer comprising platinum material formed on top of the platinum-rhodium layer.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue.

Dated: November 6, 2003

Respectfully submitted,

By 

Thomas J. D'Amico

Registration No.: 28,371

DICKSTEIN SHAPIRO MORIN &  
OSHINSKY LLP

2101 L Street NW

Washington, DC 20037-1526

(202) 785-9700

Attorney for Applicants